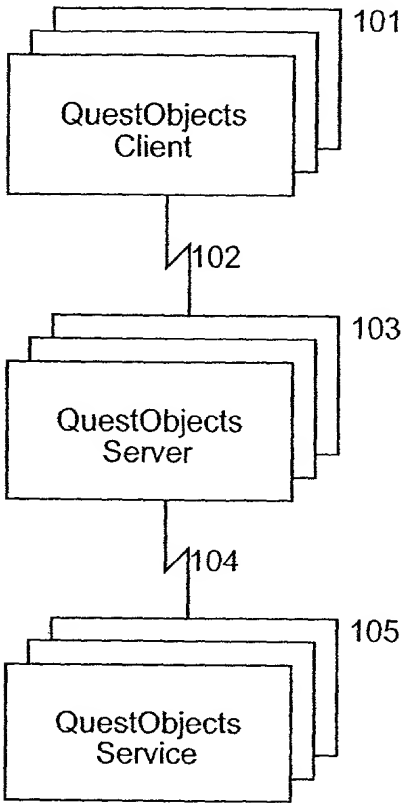
101
QuestObjects Client
102
103
QuestObjects Server
104
105
QuestObjects Service

FIGURE 1

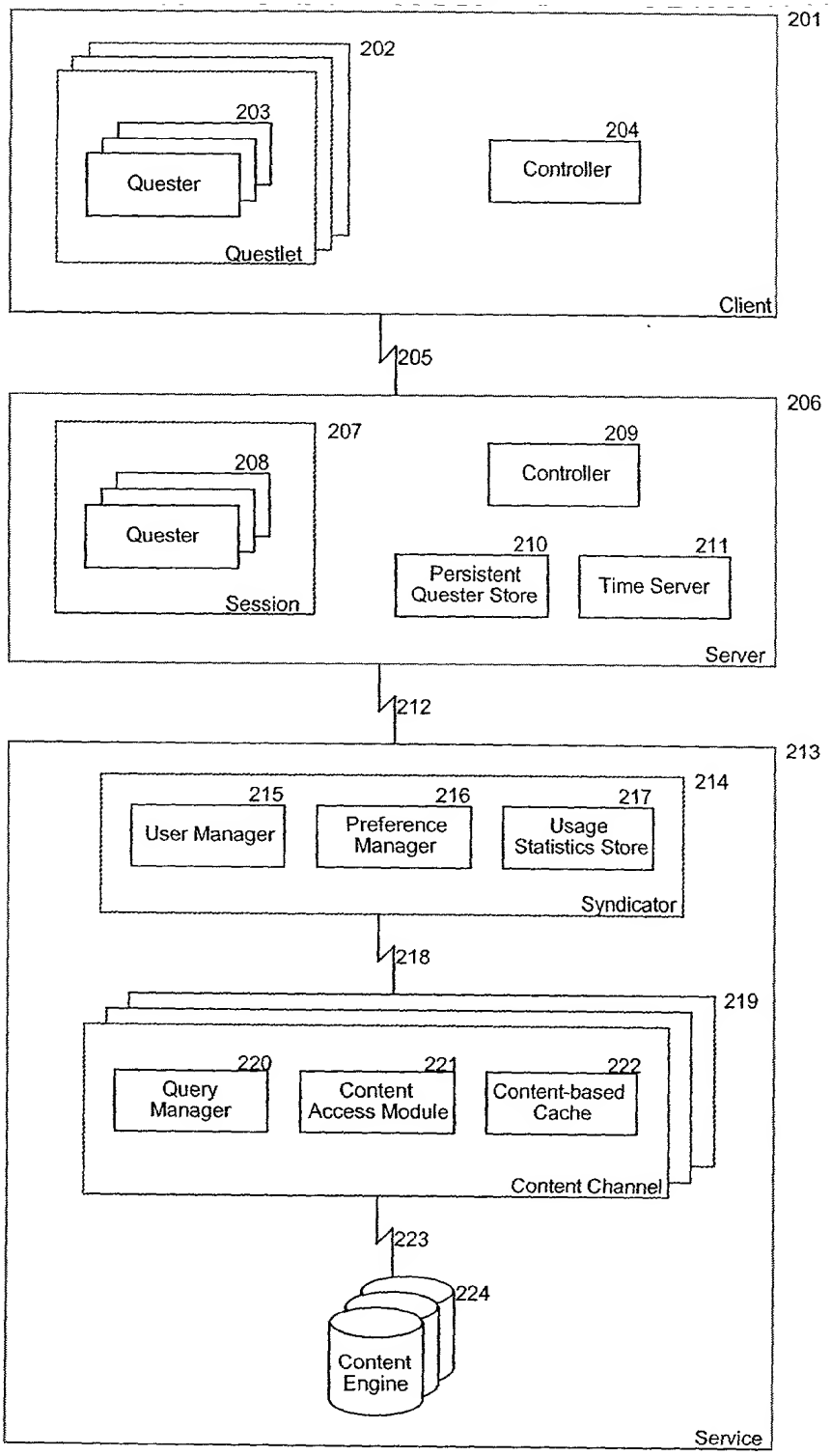
201
202
203
Quester
Questlet
204
Controller
Client
205
206
207
208
Quester
Session
209
Controller
210
Persistent Quester Store
211
Time Server
Server
212
213
214
215
User Manager
216
Preference Manager
217
Usage Statistics Store
Syndicator
218
219
220
Query Manager
221
Content Access Module
222
Content-based Cache
Content Channel
223
224
Content Engine
Service

FIGURE 2

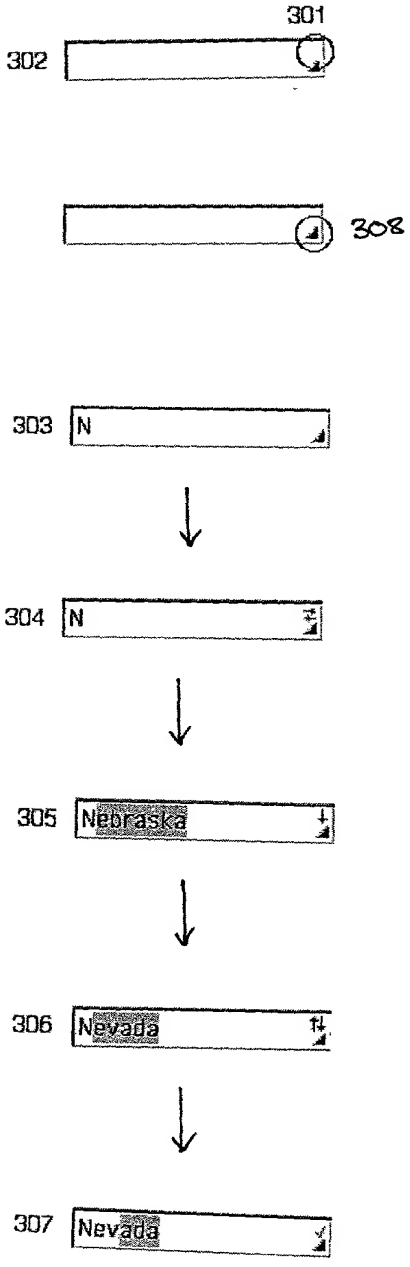

FIGURE 3A

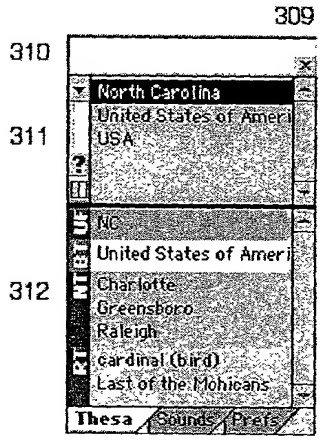

FIGURE 3B

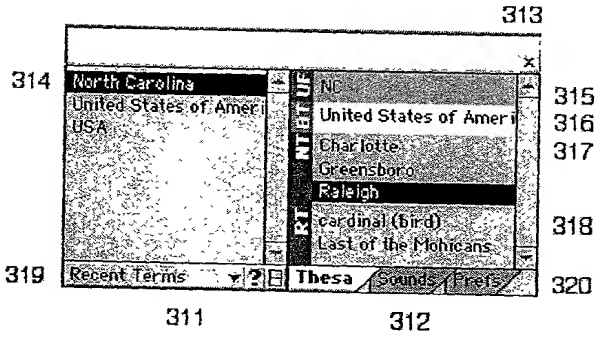

FIGURE 3C

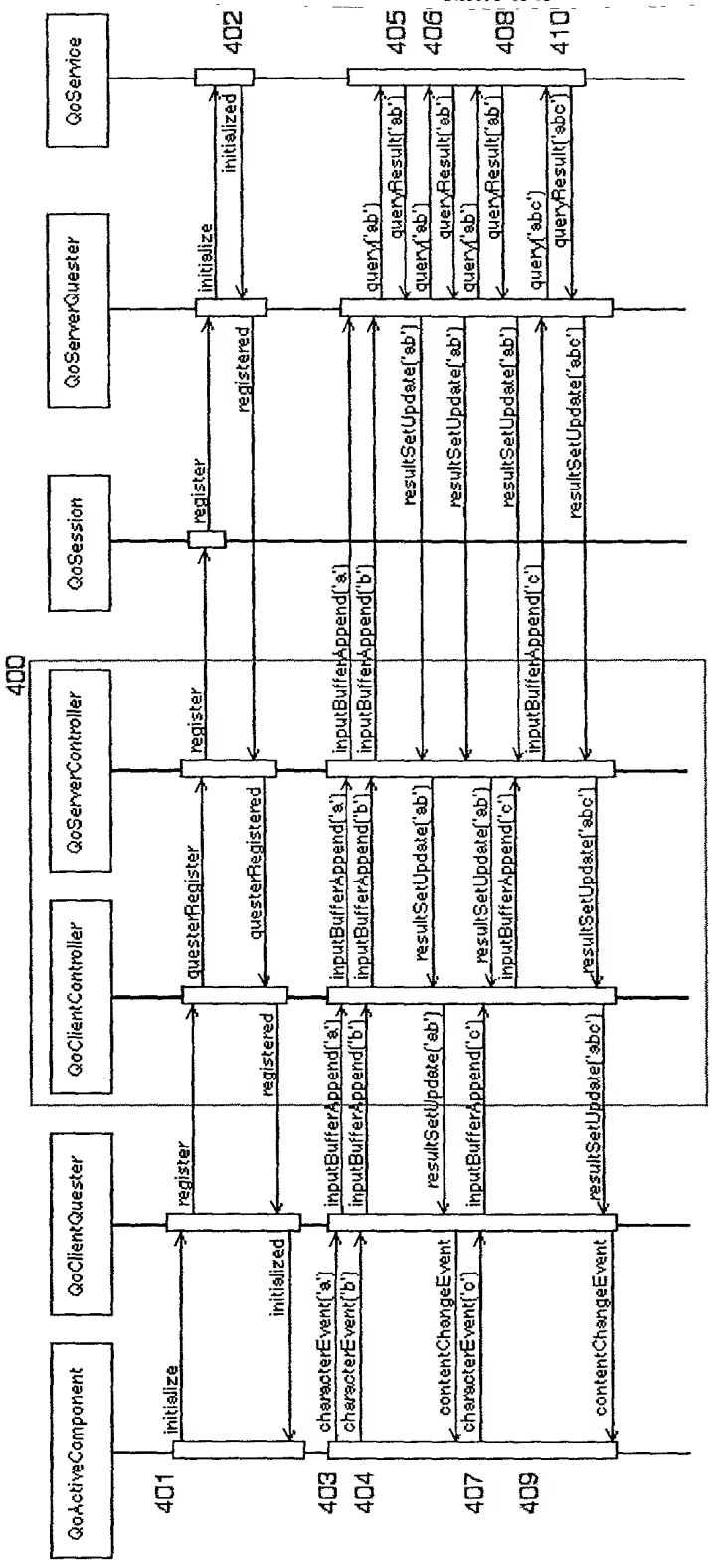
400
QoActiveComponent
QoClientQuester
QoClientController
QoServerController
QoSession
QoServerQuester
QoService
401
402
403
404
405
406
407
408
409
410
initialize
initialized
register
registered
questerRegister
questerRegistered
characterEvent('a')
characterEvent('b')
characterEvent('c')
inputBufferAppend('a')
inputBufferAppend('b')
inputBufferAppend('c')
contentChangeEvent
resultSetUpdate('ab')
resultSetUpdate('abc')
query('ab')
query('abc')
queryResult('ab')
queryResult('abc')
resultSetUpdate('ab')
resultSetUpdate('abc')

FIGURE 4

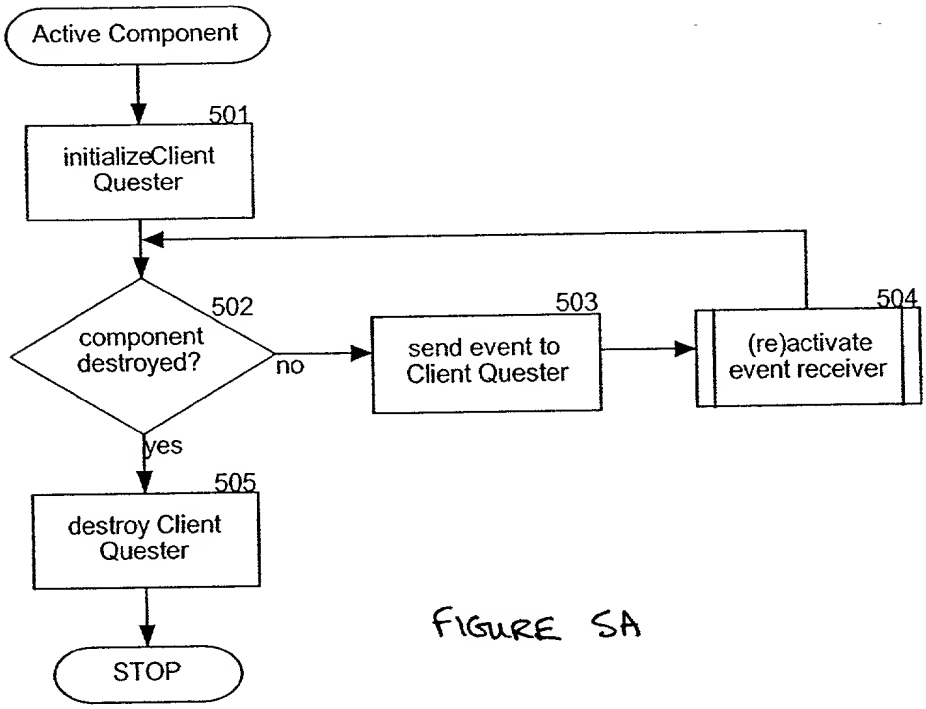

FIGURE 5A

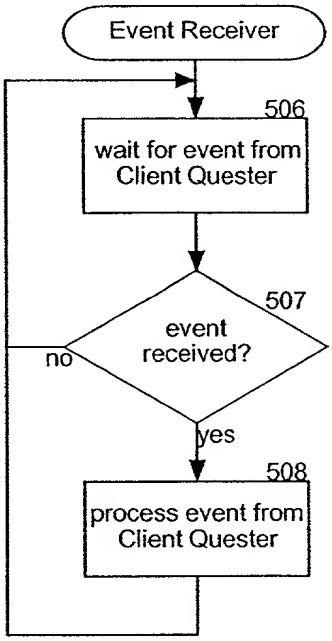

FIGURE 5B

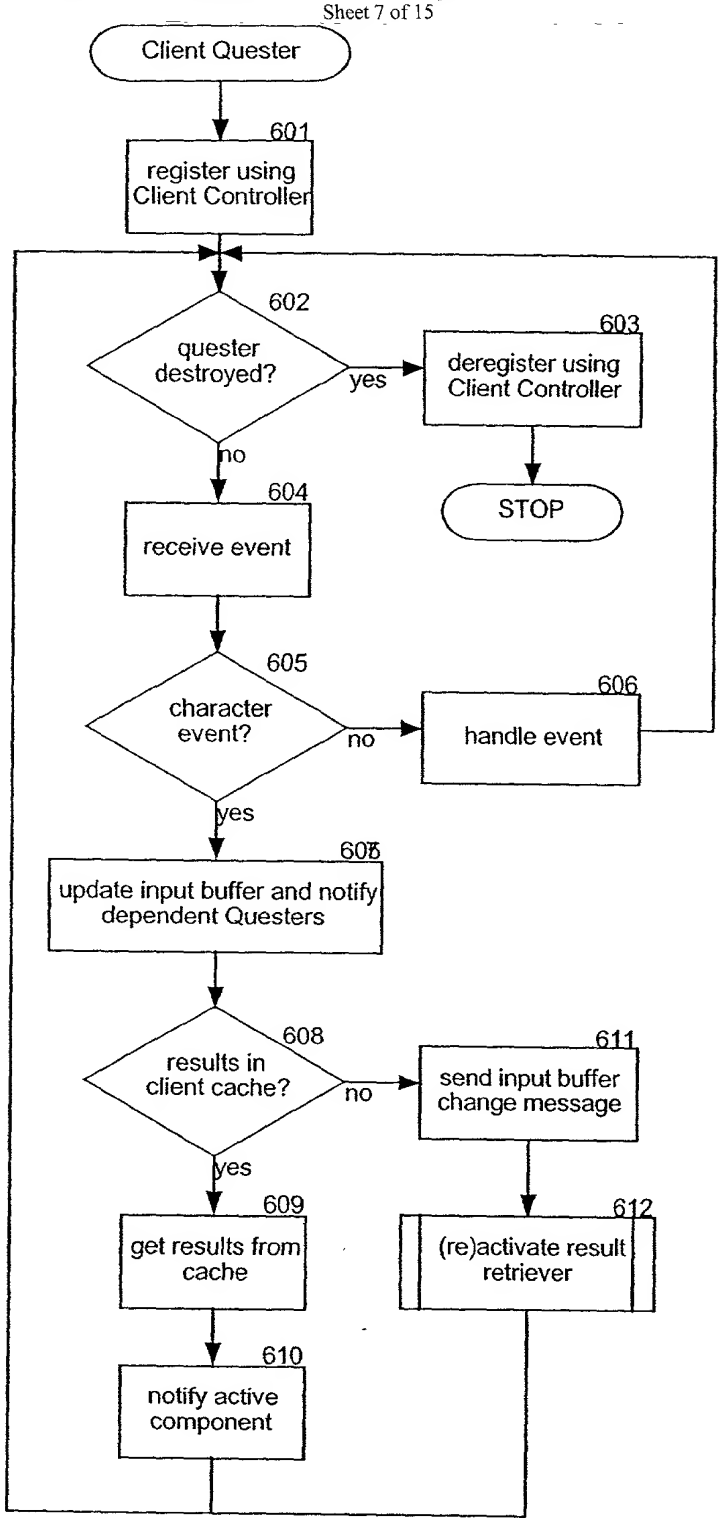
Client Quester
601
register using Client Controller
602
quester destroyed?
yes
603
deregister using Client Controller
STOP
no
604
receive event
605
character event?
no
606
handle event
yes
607
update input buffer and notify dependent Questers
608
results in client cache?
no
611
send input buffer change message
yes
609
get results from cache
612
(re)activate result retriever
610
notify active component

FIGURE 6A

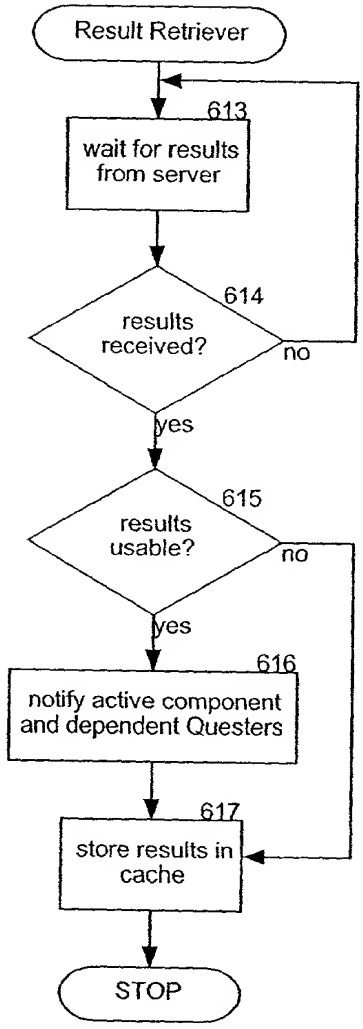
Result Retriever
613
wait for results from server
614
results received?
no
yes
615
results usable?
no
yes
616
notify active component and dependent Questers
617
store results in cache
STOP

FIGURE 6B

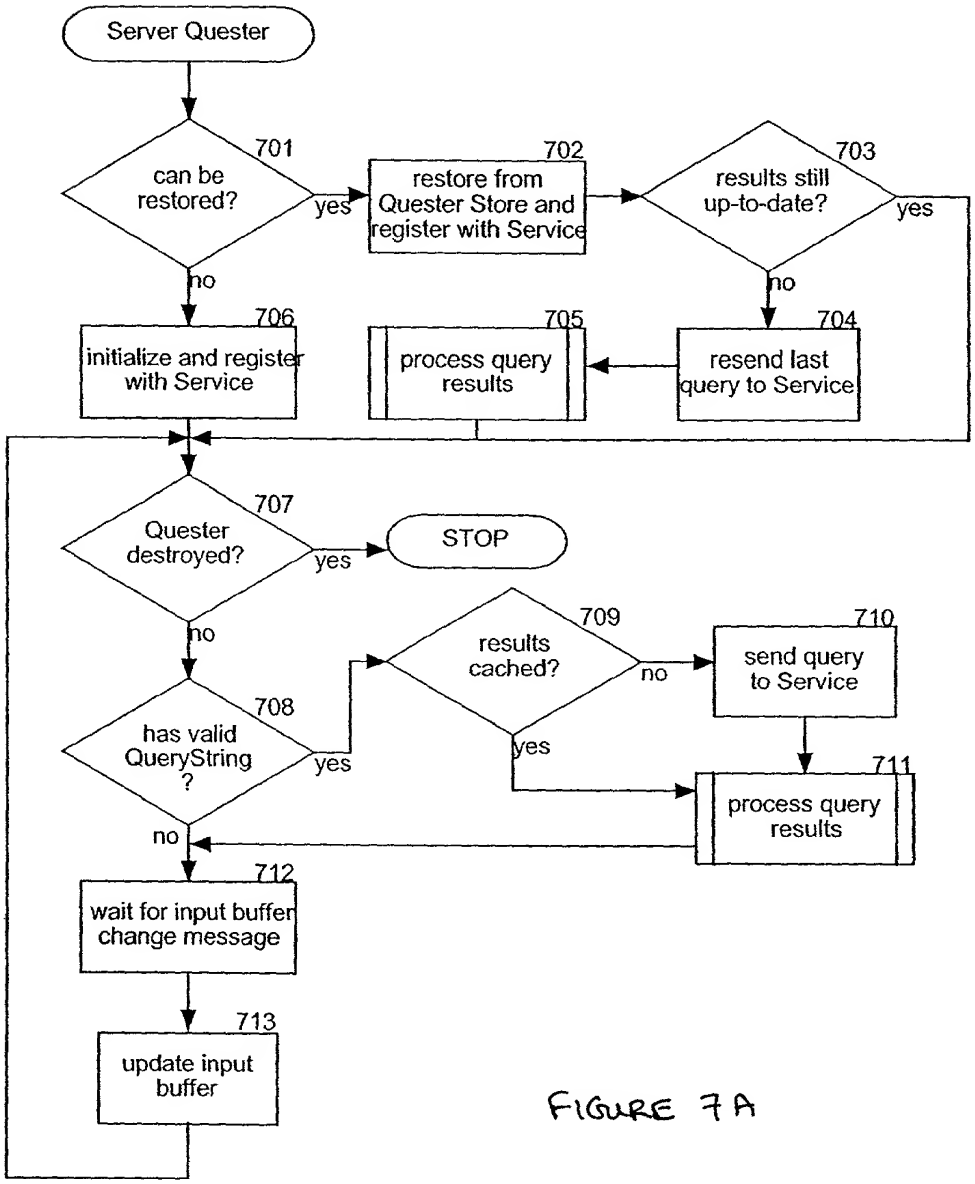
Server Quester
701
can be restored?
yes
no
702
restore from Quester Store and register with Service
703
results still up-to-date?
yes
no
704
resend last query to Service
705
process query results
706
initialize and register with Service
707
Quester destroyed?
yes
STOP
no
708
has valid QueryString ?
yes
no
709
results cached?
no
yes
710
send query to Service
711
process query results
712
wait for input buffer change message
713
update input buffer

FIGURE 7A

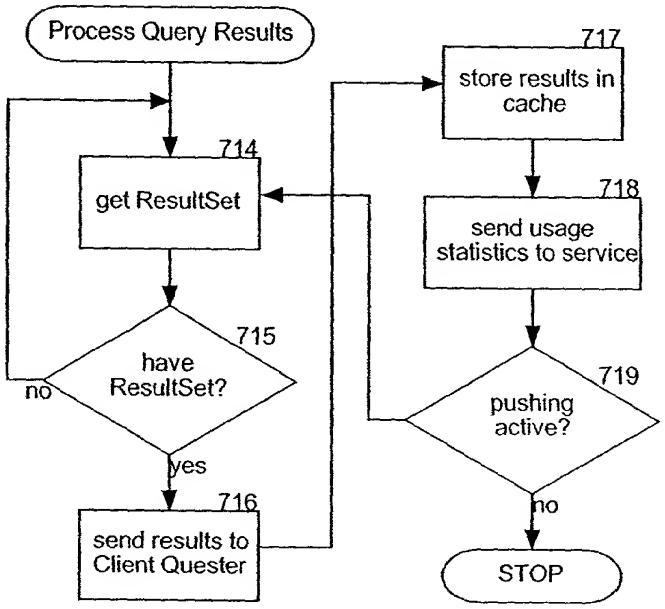
Process Query Results
714
get ResultSet
715
have ResultSet?
no
yes
716
send results to Client Quester
717
store results in cache
718
send usage statistics to service
719
pushing active?
no
STOP

FIGURE 7B

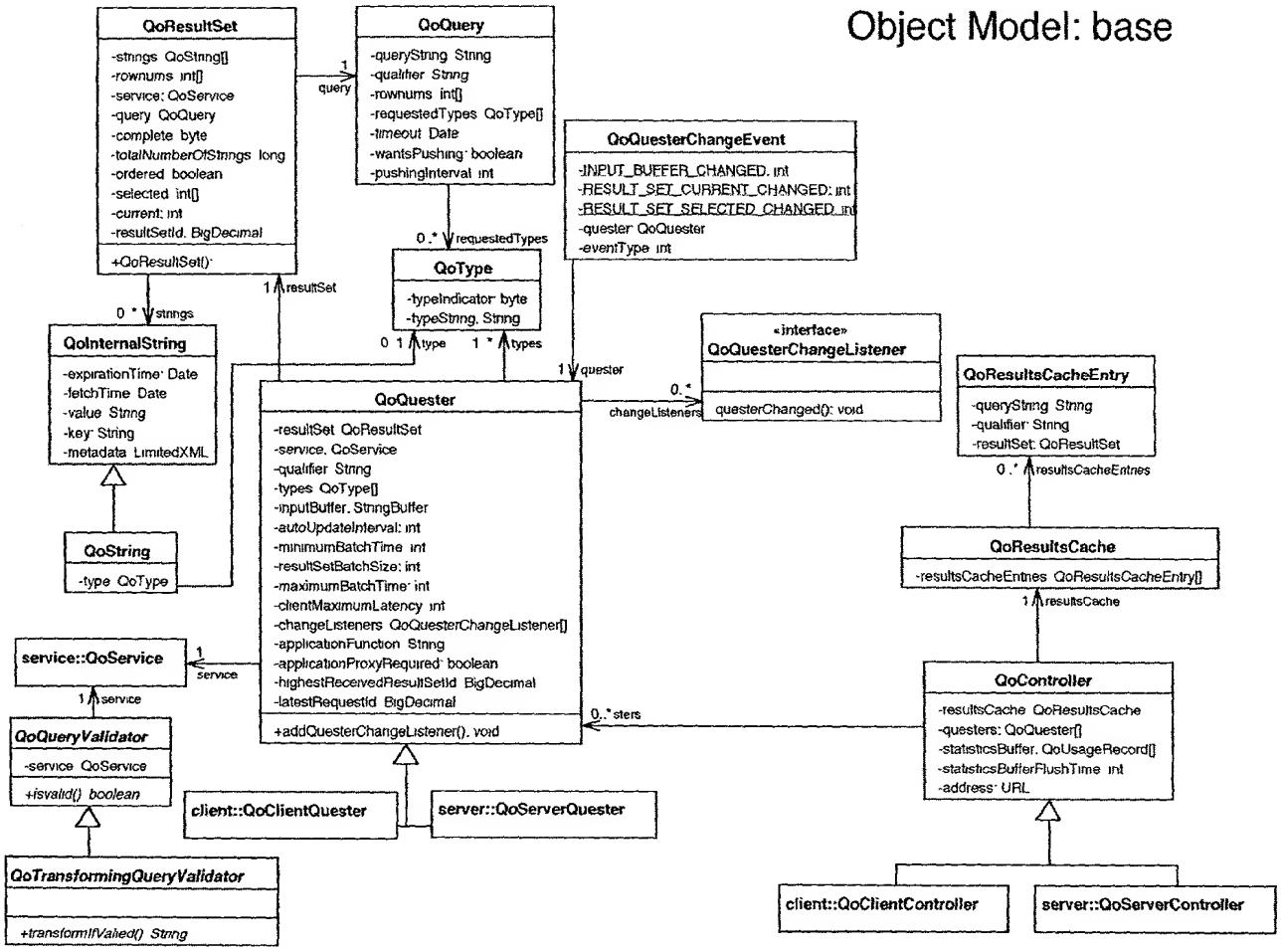
Object Model: base
QoResultSet
-strings QoString[]
-rownums int[]
-service: QoService
-query QoQuery
-complete byte
-totalNumberOfStrings long
-ordered boolean
-selected int[]
-current: int
-resultSetId. BigDecimal
+QoResultSet()
QoQuery
-queryString String
-qualifier String
-rownums int[]
-requestedTypes QoType[]
-timeout Date
-wantsPushing boolean
-pushingInterval int
query
requestedTypes
QoQuesterChangeEvent
-INPUT_BUFFER_CHANGED. int
-RESULT_SET_CURRENT_CHANGED: int
-RESULT_SET_SELECTED_CHANGED. int
-quester QoQuester
-eventType int
QoType
-typeIndicator byte
-typeString. String
resultSet
strings
type
types
quester
«interface»
QoQuesterChangeListener
questerChanged(): void
changeListeners
QoResultsCacheEntry
-queryString String
-qualifier String
-resultSet: QoResultSet
resultsCacheEntries
QoInternalString
-expirationTime Date
-fetchTime Date
-value String
-key String
-metadata LimitedXML
QoQuester
-resultSet QoResultSet
-service. QoService
-qualifier String
-types QoType[]
-inputBuffer. StringBuffer
-autoUpdateInterval: int
-minimumBatchTime int
-resultSetBatchSize: int
-maximumBatchTime int
-clientMaximumLatency int
-changeListeners QoQuesterChangeListener[]
-applicationFunction String
-applicationProxyRequired boolean
-highestReceivedResultSetId BigDecimal
-latestRequestId BigDecimal
+addQuesterChangeListener(). void
QoResultsCache
-resultsCacheEntries QoResultsCacheEntry[]
resultsCache
QoString
-type QoType
service::QoService
service
QoQueryValidator
-service QoService
+isvalid() boolean
QoController
-resultsCache QoResultsCache
-questers: QoQuester[]
-statisticsBuffer. QoUsageRecord[]
-statisticsBufferFlushTime int
-address: URL
client::QoClientQuester
server::QoServerQuester
QoTransformingQueryValidator
+transformIfValied() String
client::QoClientController
server::QoServerController

FIGURE 8A

Object Model: client

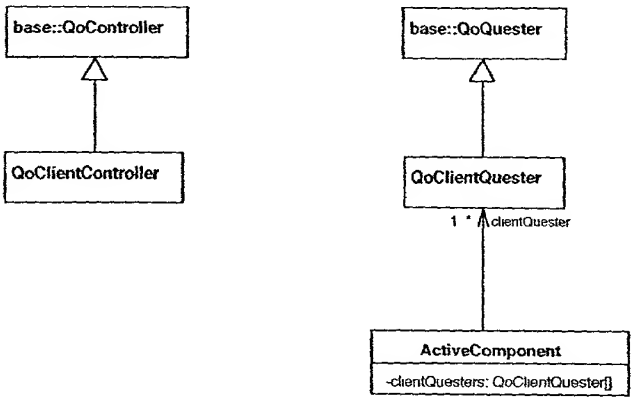

FIGURE 88

Object Model: server

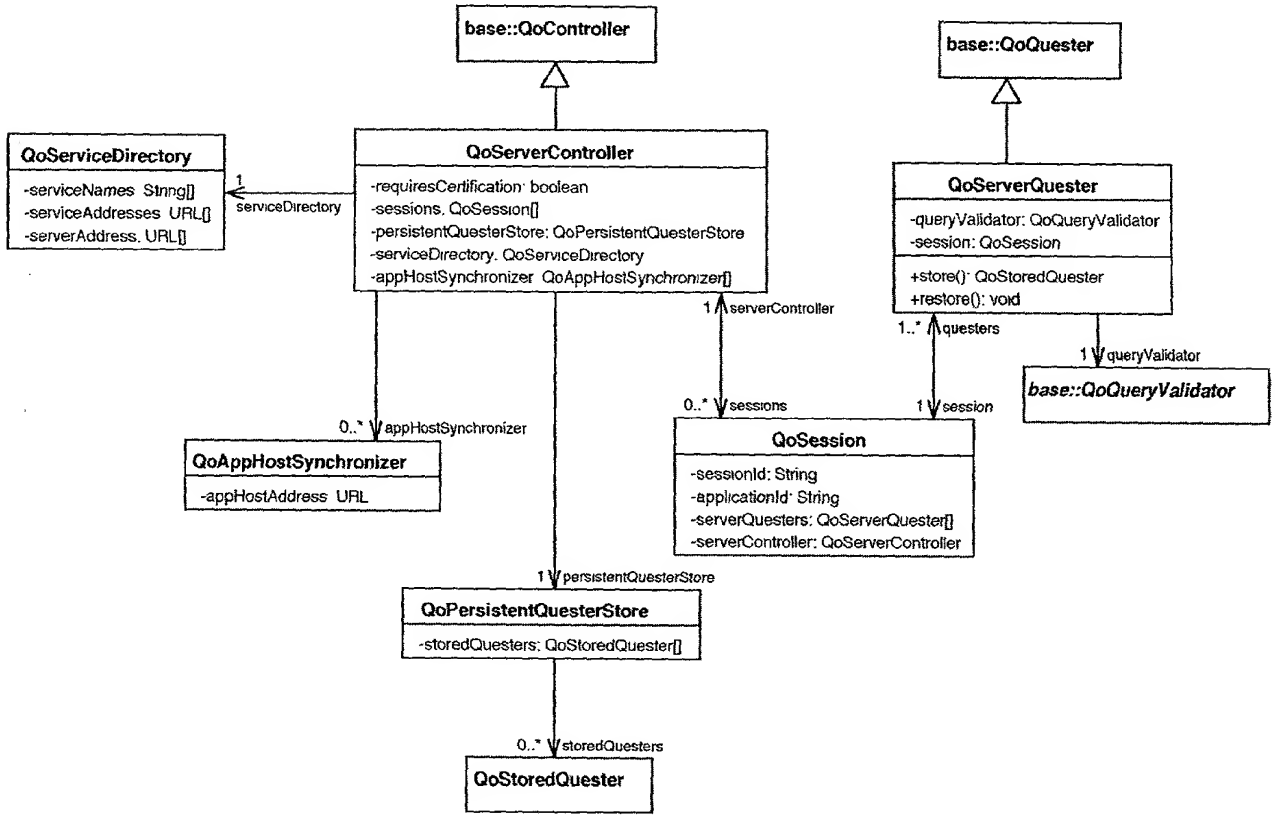

FIGURE 8C

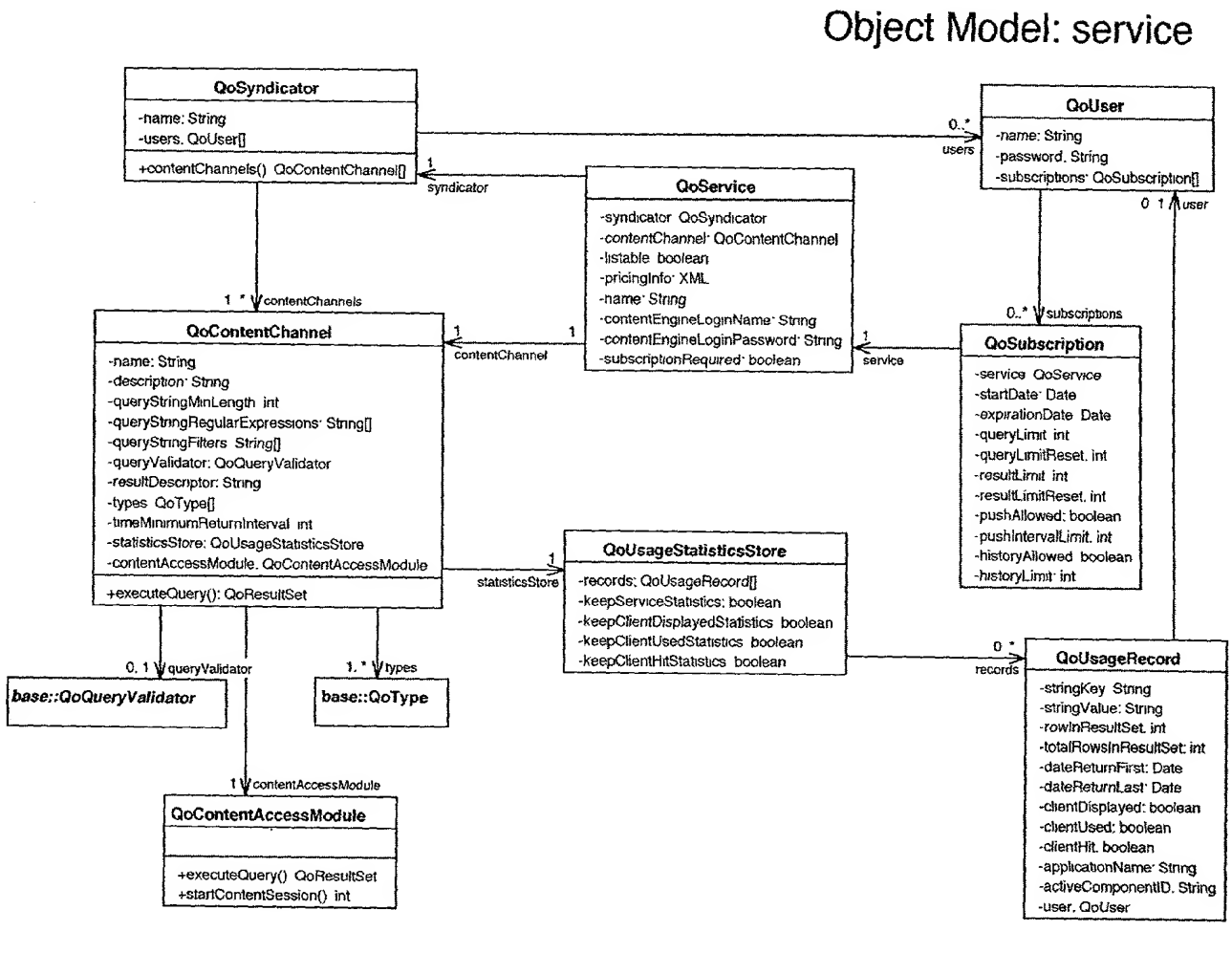
Object Model: service
QoSyndicator
-name: String
-users. QoUser[]
+contentChannels() QoContentChannel[]
QoUser
-name: String
-password. String
-subscriptions: QoSubscription[]
users
user
syndicator
QoService
-syndicator QoSyndicator
-contentChannel: QoContentChannel
-listable boolean
-pricingInfo: XML
-name: String
-contentEngineLoginName: String
-contentEngineLoginPassword: String
-subscriptionRequired: boolean
contentChannels
QoContentChannel
-name: String
-description: String
-queryStringMinLength int
-queryStringRegularExpressions: String[]
-queryStringFilters String[]
-queryValidator: QoQueryValidator
-resultDescriptor: String
-types QoType[]
-timeMinimumReturnInterval int
-statisticsStore: QoUsageStatisticsStore
-contentAccessModule. QoContentAccessModule
+executeQuery(): QoResultSet
contentChannel
service
subscriptions
QoSubscription
-service QoService
-startDate: Date
-expirationDate Date
-queryLimit int
-queryLimitReset. int
-resultLimit int
-resultLimitReset. int
-pushAllowed: boolean
-pushIntervalLimit. int
-historyAllowed boolean
-historyLimit: int
statisticsStore
QoUsageStatisticsStore
-records: QoUsageRecord[]
-keepServiceStatistics: boolean
-keepClientDisplayedStatistics boolean
-keepClientUsedStatistics boolean
-keepClientHitStatistics boolean
records
QoUsageRecord
-stringKey String
-stringValue: String
-rowInResultSet. int
-totalRowsInResultSet: int
-dateReturnFirst: Date
-dateReturnLast: Date
-clientDisplayed: boolean
-clientUsed: boolean
-clientHit. boolean
-applicationName: String
-activeComponentID. String
-user. QoUser
queryValidator
base::QoQueryValidator
types
base::QoType
contentAccessModule
QoContentAccessModule
+executeQuery() QoResultSet
+startContentSession() int

FIGURE 8D

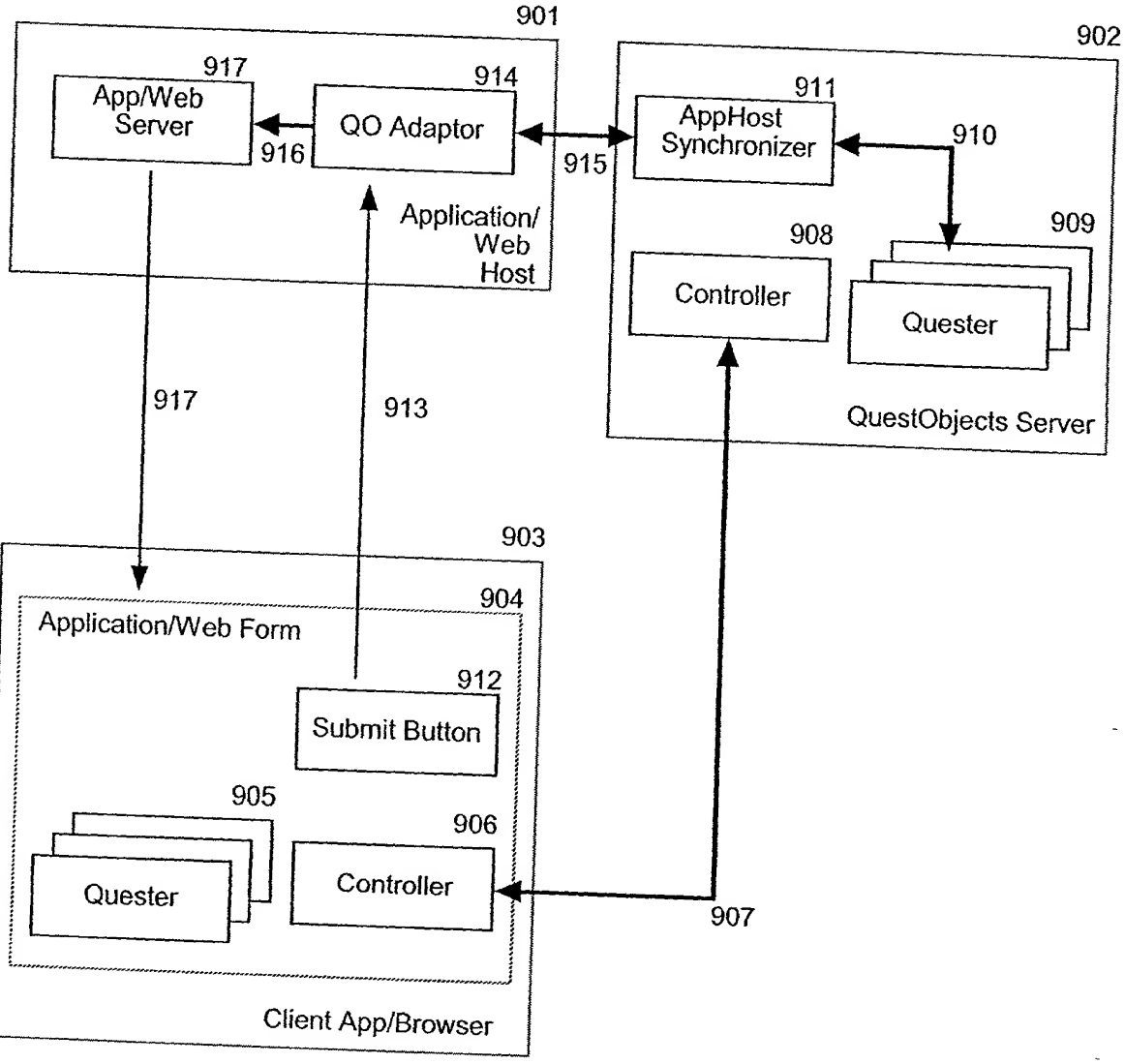
901
902
917
App/Web Server
914
QO Adaptor
916
915
911
AppHost Synchronizer
910
Application/ Web Host
908
Controller
909
Quester
917
913
QuestObjects Server
903
904
Application/Web Form
912
Submit Button
905
906
Quester
Controller
907
Client App/Browser

FIGURE 9